



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,080	11/25/2003	Shushan Bai	GP-302761	7156

7590 11/29/2004

LESLIE C. HODGES  
General Motors Corporation  
Mail Code 482-C23-B21  
P.O. Box 300  
Detroit, MI 48265-3000

EXAMINER

SY, MARIANO ONG

ART UNIT	PAPER NUMBER
----------	--------------

3683

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/722,080

Applicant(s)

BAI ET AL.

Examiner

Mariano Sy

Art Unit

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

### **DETAILED ACTION**

1. Claim 4 is objected to because of the following informalities:

Line 3 "torque to thrust means" should be -- torque-to-thrust means --.

Appropriate correction is required.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: "force sensor 42" on page 4, line 9 not shown in fig. 4 and "transfer gears 48" on page 4, line 19 not shown in fig. 5. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3683

4. Claims 1-4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said brake band" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "said speed signal" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "said proportional brake actuator force" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Muller et al. (U.S. Patent Number 4,360,092).

Re-claim 1 Muller et al. disclosed, as shown in fig. 1, a brake system comprising: a rotatable drum 10; a band brake 4 surrounding a portion of said drum including an anchor end 23 and an apply end 23; an anchor member 25 engaging said anchor end including a sensor means 26 to provide a reaction signal proportional to the force generated to said anchor end; an apply means 15 for generating an apply force at said

Art Unit: 3683

apply end to enforce engagement of said band brake and said drum; and control means responsive to said reaction signal to adjust said apply force to a desired apply force.

Re-claim 4 Muller et al. disclosed, as shown in fig. 1, wherein said apply means is a member of a group consisting of a linear actuator means and a torque-to-thrust means.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 2, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. in view of Hiramatsu (U.S. Patent Number 4,754,403).

Art Unit: 3683

Re-claims 2 and 3 Muller et al. was silent to disclose a speed sensing means for generating a speed signal proportional to a speed of the drum and a force sensing means responsive to said apply force for generating an apply signal proportional to said apply force.

Hiramatsu teaches, as shown in fig. 1-3, a speed sensing means 23 for generating a speed signal proportional to a speed of the drum and a force sensing means 22 responsive to said apply force for generating an apply signal proportional to said apply force.

It would have been obvious to one of ordinary skill in the art to have utilized the known speed sensing means and force sensing means into the brake system of Muller et al., in view of the teaching of Hiramatsu, in order to effectively apply enough braking force on the brake drum.

Re-claims 5 and 6 Muller et al. disclose, as shown in fig. 1, a method of establishing an actuator force in a brae system having a rotating drum 10 and a brake band 4, said method comprising the steps of: establishing a desired brake torque; determining a desired anchor force; measuring an actual anchor force 26 at said brake band.

However Muller et al. was silent to disclose step of determining a speed of the drum and issuing an actuator control signal to a brake actuator signal to an actuator at the brake band to apply an actuator braking force thereto proportional to the brake actuator signal; determining an actual actuator force at said actuator and comparing the actual actuator force with the proportional brake actuator force.

Art Unit: 3683

Hiramatsu teaches, as shown in fig. 1-3, step of determining a speed 23 of the drum and issuing an actuator control signal to a brake actuator signal to an actuator 2b at the brake band to apply an actuator braking force thereto proportional to the brake actuator signal; determining an actual actuator force at said actuator and comparing the actual actuator force with the proportional brake actuator force.

It would have been obvious to one of ordinary skill in the art to have utilized the known step of determining a speed of the drum and issuing an actuator control signal to a brake actuator signal to an actuator at the brake band to apply an actuator braking force thereto proportional to the brake actuator signal; determining an actual actuator force at said actuator and comparing the actual actuator force with the proportional brake actuator force into the brake system of Muller et al., in view of the teaching of Hiramatsu, in order to effectively apply enough braking force on the brake drum.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwanaga (U.S. Patent Number 4,693,141),

Furuya et al. (U.S. Patent Number 4,860,860),

Armstrong (U.S. Patent Number 4,881,453),

Haka et al. (U.S. Patent Number 5,445,246),

Fukasawa et al. (U.S. Patent Number 5,474,158),

Weilant (U.S. Patent Number 5,842,947),

Kraska (U.S. Patent Number 6,110,068),

Art Unit: 3683

Fujita (U.S. Patent Number 6,260,671 B1).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 703-308-3427. The examiner can normally be reached on Mon.-Fri. from 9:00 A.M. to 3:00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci, can be reached on 703-308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*M. Sy*  
M. Sy

November 16, 2004

*M. C. Graham*  
11/23/04  
MATTHEW C. GRAHAM  
PRIMARY EXAMINER  
GROUP 310